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IS 2604 (1988): Lead Anodes for Electroplating [MTD 24: Corrosion Protection]

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Indian Standard

SPECIFICATION FOR LEAD ANODES FOR ELECTROPLATING

(Second Revision)

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
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Indian Standard

SPECIFICATION FOR LEAD ANODES FOR ELECTROPLATING

(Second Revision)

0. FOREWORD

0.1 This Indian Standard (Second Revision) was adopted by the Bureau of Indian Standards on 10 August 1988, after the draft finalized by the Metallic and Non-Metallic Finishes Sectional Committee had been approved by the Structural and Metals Division Council.

0.2 This standard was first published in 1964 and subsequently revised in 1979. Keeping in view the experience gained during the years, it was felt necessary to revise this standard. In this revision, the limit of minimum lead content has been raised to 99·95 percent and the percentage limits of the various elements present as impurities in lead anode have been modified.

0.3 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with is IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

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*Rules for rounding off numerical values (*revised*).

1. SCOPE

1.1 This standard covers the requirements of lead anodes used in electroplating.

2. CHEMICAL COMPOSITION

2.1 Lead anodes shall contain not less than 99·95 percent metallic lead but in the event of copper being present, the lead content may be reduced by an amount not exceeding the amount of such copper and shall meet the requirements of the following chemical composition when analyzed in accordance with IS : 403-1964* or by spectrographic method, if mutually agreed between the supplier and the purchaser:

Element	*Percent*
Copper, *Max*	0·08 *Max*
As + Sb + Sn, *Max*	0·002
Bismuth, *Max*	0·005
Iron, *Max*	0·002
Silver	0·002
Zinc, *Max*	0·001
Total of all impurities, *Max*	0·10
Lead, *Min*	99·95

3. SHAPE AND SIZE

3.1 Lead anodes shall be supplied in as-cast, rolled or extruded form as specified by the purchaser. Dimensions of anodes shall be as agreed to between the purchaser and the supplier.

3.1.1 As-cast lead anodes may be of rectangular, multi-edges or corrugated cross sections and with positive contact hooks cast integrally with the anode or soldered in a hole in the top. When rolled lead sheets are used for anodes, it shall be supported by bolting between two bus bars.

4. FREEDOM FROM DEFECTS

4.1 Anodes shall be clean, and free from defects, such as cracks, warps, inclusions, porosity, ragged edges, surface film such as rolling skin, which may adversely affect its uniform dissolution while in use.

5. SAMPLING AND PREPARATION OF SAMPLE FOR ANALYSIS

5.1 Sampling of lead anodes for chemical analysis shall be agreed to between the manufacturer and the purchaser. From each of the anodes selected, sawings shall be obtained from not fewer than three widely spaced positions. The sawings shall be thoroughly mixed and quartered, and the sample for chemical analysis taken from the mixed material. The sawings shall be treated with a magnet to remove any free iron or steel particles.

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*Methods of chemical analysis lead and antimonial lead (*revised*).

6. PACKING

6.1 Unless otherwise specified, anodes shall be separated according to their sizes and shall be packed in such a manner as to ensure safe transportation to the point of delivery. Wherever practicable, one size of anodes shall be packed in a single container.

7. MARKING

7.1 The anodes shall be marked with the name, initials or trade-mark of the manufacturer. In case of anodes with hooks, the mark shall be placed near the hooks.

7.1.1 Anodes may also be marked with the Standard Mark. Details are available with the Bureau of Indian Standards.

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